



1 ENERGY AND ENVIRONMENT CABINET

2 Department for Natural Resources

3 Division of Oil and Gas

4 (Amendment)

5 805 KAR 1:020. Protection of fresh water zones.

6 RELATES TO: KRS 349.045, 349.110, 353.520

7 STATUTORY AUTHORITY: KRS 349.115, [Chapter 13A,] 353.540, 353.550, 353.560

8 NECESSITY, FUNCTION, AND CONFORMITY: KRS 353.540 authorizes the  
9 Department for Natural Resources to administer and enforce the provisions of KRS 353.500 to  
10 353.720. KRS 349.115 authorizes the Department for Natural Resources to adopt all rules,  
11 administrative regulations, and amendments to implement the provisions of KRS Chapter 349  
12 governing coal bed methane wells. This administrative regulation establishes the requirements to  
13 protect fresh water zones from contamination associated with the production of oil and gas. [The  
14 waste of oil and gas is prohibited by KRS 353.520. It is the purpose of this administrative regulation  
15 to protect fresh water zones from contamination associated with the production of oil and gas. KRS  
16 353.550 provides that the department shall have the authority to set forth the requirements for casing,  
17 operation and plugging of wells to prevent escape of oil or gas, the detrimental intrusion of water,  
18 blowouts, cave-ins, seepages and fires.]

19 Section 1. [Definitions. ~~The definitions contained in KRS 353.510 and the following~~  
20 ~~additional definitions shall apply to this administrative regulation:~~

1           ~~(1) "Abnormal pressure" means a reservoir pressure that exceeds the hydrostatic pressure of~~  
2 ~~fresh water extending from the reservoir to the surface.~~

3           ~~(2) "Annulus" means the space between two (2) strings of casing or between a string of casing~~  
4 ~~and the bore hole wall.~~

5           ~~(3) "Casing (casing string)" means steel tubes or pipes installed in a well.~~

6           ~~(4) "Surface casing" means the first and largest diameter casing installed in a well and its~~  
7 ~~primary uses are to make the bore hole stand up and to protect the fresh water zones.~~

8           ~~(5) "Intermediate casing" means one or more strings of pipes installed in a well in addition~~  
9 ~~to the surface casing in which each string is smaller in diameter than the previous.~~

10          ~~(6) "Long casing string" means the last casing installed in a well to be used for production or~~  
11 ~~injection purposes.~~

12          ~~(7) "Zone" means a layer of strata capable of producing or receiving fluids.~~

13          Section 2.] Protection of Fresh Water Zones for Drilling and[~~or~~] Plugging Operations. (1)  
14 During drilling operations, one (1) of the following methods shall be used to protect fresh water  
15 zones:

16          (a) Method A. Casing shall be set on a casing shoulder and said casing shall have a shoe  
17 installed on the bottom of the bottom joint. Upon the completion of the drilling program, all the  
18 recoverable casing must be removed or cemented to the surface.

19          (b) Method B. Casing shall be set on a shoulder and cemented sufficiently to cover 100 feet  
20 including the shoe. Upon completion of the drilling, all of the recoverable casing must be removed  
21 or cemented to the surface.

22          (c) Method C. A top to bottom drilling mud system with a filtrate water loss of less than ten  
23 (10) cubic centimeters, as established in "Recommended Practice for Field Testing Water-based

1 Drilling Fluids" API RP 13B-1 Fourth Edition, March, 2009 [~~determined by American Petroleum~~  
2 ~~Institute standards, in its publication "Standard Procedures for Field Testing Water Based Drilling~~  
3 ~~Fluids" API RP 13B-1, Sections 1, 2 and 3, June 1, 1990, filed and incorporated herein by reference.~~  
4 ~~Copies may be obtained from the Department for Natural Resources, P. O. Box 14090, Lexington,~~  
5 ~~Kentucky 40512-4090].~~ Certification of filtrate water loss shall [must] be made by the operator.

6 (2) In the event a well is to be plugged, then it shall be plugged in the manner prescribed by  
7 805 KAR 1:060 [~~or 805 KAR 1:070~~].

8 Section 2[3]. Protection of Fresh Water Zones. Any well drilled in the Commonwealth of  
9 Kentucky subject to the jurisdiction of the Division of Oil and Gas [~~Department for Natural~~  
10 ~~Resources subsequent to the effective date of this administrative regulation~~] shall be equipped with  
11 the following fresh water protection prior to production or injection.

12 (1) A protective string of casing, be it surface, intermediate, or long string, shall extend thirty  
13 (30) feet below the deepest known fresh water zone. The [~~Such~~] protective string shall have cement  
14 circulated in the annular space outside said casing of a sufficient volume of cement, calculated using  
15 approved engineering methods, to assure the return of the cement to the surface. In the event cement  
16 does not return to the surface, every reasonable attempt will be made to fill the annular spaces by  
17 introducing cement from the surface. If the intermediate casing or long casing string is:

18 (a) Cemented to the surface; or

19 (b) Cemented thirty (30) feet into the next larger string of cemented casing in conformity  
20 with prescribed procedure, the string or combination of strings shall be considered as the fresh water  
21 protection.

1 (2) In areas where abnormal pressures are expected or encountered, the surface and/or  
2 intermediate casing string shall be anchored in sufficient cement, at a sufficient depth to contain said  
3 pressures, and blowout prevention valves and related equipment shall be installed.

4 (3) If a well is drilled through a void, the hole shall be drilled at least thirty (30) feet below  
5 the void, the annular space shall be cemented from the base of the casing up to the void and to the  
6 surface from the top of the void, or it shall be cemented at least fifty (50) feet into the next higher  
7 string or strings of casing that are cemented to the surface and be verified by a cement top log. If an  
8 operator is unable to perform the casing and cementing requirement described above, the department  
9 may approve alternative casing procedures proposed by the operator, if the director determines that  
10 the alternative casing procedures are operationally equivalent to the requirements imposed by this  
11 subsection. If an operator encounters more than one (1) void, the department may also impose special  
12 requirements on the operator to prevent communication between two (2) or more voids.

13 [Section 4. Wells Used for Injection of Fluids.

14 ~~(1) The injection of fluids shall be accomplished through a tubing and packer arrangement~~  
15 ~~with the packer set immediately above the injection zone, and the annulus between the tubing and~~  
16 ~~casing shall be monitored by pressure sensitive devices. The injection pressure shall be regulated to~~  
17 ~~minimize the possibility of fracturing the confining strata. Upon application, and after notice and~~  
18 ~~hearing, a variance from this requirement may be granted by the director, upon a showing by an~~  
19 ~~individual operator that alternate prudent engineering practices shall result in fresh water protection.~~

20 The following are exempted from the requirements of this section:

21 (a) ~~Injection of fluids for the purpose of well stimulation; and~~

22 (b) ~~Injection of gas for the purpose of storage.~~

1       (2) ~~Before injecting fluids into a well not previously permitted for injection purposes, the~~  
2 ~~operator shall make application to the department for an injection permit for said well. The~~  
3 ~~application for a permit to drill, deepen or convert a well for the purpose of injection of fluids shall~~  
4 ~~include:~~

5       (a) ~~A statement by the operator as to whether the well is to be used for pressure maintenance,~~  
6 ~~secondary recovery, tertiary recovery, gas storage or for disposal purposes;~~

7       (b) ~~The approximate depths of the known fresh water zones; and~~

8       (c) ~~A plat showing:~~

9       1. ~~The names of all lessees and lessors contiguous to the tract on which the injection shall~~  
10 ~~occur;~~

11       2. ~~The Carter Coordinate location and the elevation of the well site;~~

12       3. ~~The geologic name and depth of the injection zone;~~

13       4. ~~At least two (2) surface features, by bearing and distance from the proposed well site,~~  
14 ~~which appear on the U.S.G.S. seven and one half (7 1/2) minute topographic map of the area;~~

15       5. ~~The name of said topographic map and county;~~

16       6. ~~The location of all known fresh water wells within a radius of 1,000 feet of the proposed~~  
17 ~~injection well site;~~

18       7. ~~The location and completion and/or plugging record of all wells whether producing or~~  
19 ~~plugged, within a radius of 1,000 feet of the proposed injection well site.~~

20       (3) ~~Prior to injection into any well, the operator shall furnish the department with a certificate~~  
21 ~~indicating that all requirements of this administrative regulation have been met. The certificate shall~~  
22 ~~include the following:~~

1       ~~(a) The identification of said well by permit number, operator's name, lease name, well~~  
2       ~~number, Carter Coordinate location, elevation and county;~~

3       ~~(b) The entire casing and cementing record, any packers and other special down hole~~  
4       ~~equipment, and cement bond logs, if run;~~

5       ~~(c) The anticipated maximum bottom hole pressure (psi) and volume in barrels or cubic feet,~~  
6       ~~per day;~~

7       ~~(d) The identification of the injection zone by geological name and depth (top and bottom of~~  
8       ~~zone), the number of perforations if applicable, or the interval of open hole; and~~

9       ~~(e) Certification by the operator that the mechanical integrity of the well has been tested.~~

10       ~~Section 5. Exemptions for Preexisting Wells. Any injection well in existence prior to the~~  
11       ~~effective date of this administrative regulation shall be exempt from the requirements of this~~  
12       ~~administrative regulation until such time as in the opinion of the department, said well is leaking~~  
13       ~~fluids to other zones, or to the surface; provided, however, that this exemption shall not apply unless~~  
14       ~~within one (1) year from the effective date of this administrative regulation, the operator files an area~~  
15       ~~plat, or plats, showing all of such operator's injection and associated production wells.~~

16       ~~Section 6. Recordkeeping. The operator of an injection project shall monitor injection~~  
17       ~~pressures and volumes at least monthly, and shall keep said records on file in his place of business~~  
18       ~~for the life of the project, plus five (5) years. The director may require more frequent monitoring, if~~  
19       ~~in his opinion, good reason therefor exists.]~~

20       Section 3. Material Incorporated by Reference. (1) "Recommended Practice for Field Testing  
21       Water-based Drilling Fluids" API RP 13B-1 Fourth Edition, March, 2009, is incorporated by  
22       reference;

1        (2) This document may be inspected, copied, or obtained, subject to applicable copyright  
2   law, at the Kentucky Department for Natural Resources, Division of Oil and Gas, 300 Sower  
3   Boulevard, Frankfort, Kentucky 40601, Monday through Friday, 8 a.m. to 4:30 p.m.

805 KAR 1:020 approved for filing.  
Pages (1-7)

7/10/2019

Date

Charles G. Snavely

Charles G. Snavely, Secretary  
Energy and Environment Cabinet



**PUBLIC HEARING AND PUBLIC COMMENT PERIOD:** A public hearing on this administrative regulation shall be held on August 22, 2019 at 5:00 P.M. (Eastern Time) in Training Room C of the Energy and Environment Cabinet at 300 Sower Blvd, Frankfort, Kentucky. Individuals interested in being heard at this hearing shall notify this agency five workdays prior to the hearing, of their intent to attend. If no notification of intent to attend the hearing is received by that date, the hearing may be cancelled. This hearing is open to the public. Any person who wishes to be heard will be given an opportunity to comment on the proposed administrative regulation. A transcript of the public hearing will not be made unless a written request for a transcript is made. If you do not wish to be heard at the public hearing, you may submit written comments on the proposed administrative regulation. Written comments shall be accepted through August 31, 2019. Send written notification of intent to attend the public hearing or written comments on the proposed administrative regulation to the contact person.

**CONTACT PERSON:** Michael Mullins, Regulation Coordinator, 300 Sower Blvd, Frankfort, Kentucky 40601, phone: (502) 782-6720, fax: (502) 564-4245, email: michael.mullins@ky.gov.

REGULATORY IMPACT ANALYSIS  
AND TIERING STATEMENT

Administrative Regulation No.: 805 KAR 1:020  
Contact Person: Michael Mullins

Contact number: (502) 782-6720  
Email: michael.mullins@ky.gov

(1) Provide a brief summary of:

- (a) What this administrative regulation does: This administrative regulation protects fresh water zones from contamination associated with the production of oil and gas.
- (b) The necessity of this administrative regulation: This administrative regulation is necessary to protect freshwater zones.
- (c) How this administrative regulation conforms to the content of the authorizing statutes: KRS 353.550 authorizes that the department shall have the authority to set forth the requirements for casing, operation and plugging of wells to prevent escape of oil or gas, and the detrimental intrusion of water. This administrative regulation sets forth requirements for the protection of freshwater zones.
- (d) How this administrative regulation currently assists or will assist in the effective administration of the statutes: This administrative regulation assists in the effective administration of the statutes by protecting freshwater zones.

(2) If this is an amendment to an existing administrative regulation, provide a brief summary of:

- (a) How the amendment will change this existing administrative regulation: This amendment deletes definitions that will then be inserted into a new definition administrative regulation for the chapter. It also updates material incorporated by reference and inserts necessary language for the merging of coalbed methane information into the administrative regulation.
- (b) The necessity of the amendment to this administrative regulation: This amendment is necessary to place information related to coalbed methane wells into 805 KAR Chapter 1 as well as update forms and remove definitions.
- (c) How the amendment conforms to the content of the authorizing statutes: This amendment conforms to the authorizing statutes by inserting information related coalbed methane wells and the protection of freshwater zones.
- (d) How the amendment will assist in the effective administration of the statutes: KRS 353.550 authorizes that the department shall have the authority to set forth the requirements for casing, operation and plugging of wells to prevent escape of oil or gas, and the detrimental intrusion of water. These amendments assists in the effective administration of the statutes by providing information that protects freshwater zones for coalbed methane wells in the same location as all other oil or gas wells.

(3) List the type and number of individuals, businesses, organizations, or state and local governments affected by this administrative regulation: There are approximately 1,060 active oil and gas operators in the commonwealth.

(4) Provide an analysis of how the entities identified in question (3) will be impacted by either the implementation of this administrative regulation, if new, or by the change, if it is an amendment, including:

(a) List the actions that each of the regulated entities identified in question (3) will have to take to comply with this administrative regulation or amendment: The entities listed in question (3) above will be required to comply with the provisions of this administrative regulation for coalbed methane wells as well as the new document incorporated by reference.

(b) In complying with this administrative regulation or amendment, how much will it cost each of the entities identified in question (3): Compliance with these amendments will not cost the regulated entity any additional funds. These requirements are currently in 805 KAR 9:010.

(c) As a result of compliance, what benefits will accrue to the entities identified in question (3): Oil and gas operators will benefit from having all the information related to drilling a gas well in one location including coalbed methane.

(5) Provide an estimate of how much it will cost the administrative body to implement this administrative regulation:

(a) Initially: There will be no costs to the administrative body with implementation of this amendment.

(b) On a continuing basis: There will be no costs to the administrative body with implementation of this amendment.

(6) What is the source of the funding to be used for the implementation and enforcement of this administrative regulation: The funding for implementation of the amendments to this administrative regulation will be a combination of general funds and restricted funds.

(7) Provide an assessment of whether an increase in fees or funding will be necessary to implement this administrative regulation, if new, or by the change if it is an amendment: The amendments to this administrative regulation will not require an increase in fees or funding.

(8) State whether or not this administrative regulation established any fees or directly or indirectly increased any fees: This administrative regulation does not establish or increase any fees.

(9) TIERING: Is tiering applied? (Explain why or why not) No. All entities that operate an oil or gas well in the Commonwealth will be required to meet the same standards regarding protection of freshwater.

## FISCAL NOTE ON STATE OR LOCAL GOVERNMENT

Administrative Regulation No.: 805 KAR 1:020  
Contact Person: Michael Mullins

Contact number: (502) 782-6720  
Email: michael.mullins@ky.gov

1. What units, parts or divisions of state or local government (including cities, counties, fire departments, or school districts) will be impacted by this administrative regulation? The Division of Oil and Gas and the Division of Water.
2. Identify each state or federal statute or federal regulation that requires or authorizes the action taken by the administrative regulation. KRS 353.540, 353.550, and 353.560.
3. Estimate the effect of this administrative regulation on the expenditures and revenues of a state or local government agency (including cities, counties, fire departments, or school districts) for the first full year the administrative regulation is to be in effect.
  - (a) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for the first year? This administrative regulation will not generate revenue.
  - (b) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for subsequent years? This administrative regulation will not generate revenue in subsequent years.
  - (c) How much will it cost to administer this program for the first year? There will not be a cost increase associated with the amendments to this administrative regulation.
  - (d) How much will it cost to administer this program for subsequent years? Future costs would remain essentially unchanged related to this amendment.

Note: If specific dollar estimates cannot be determined, provide a brief narrative to explain the fiscal impact of the administrative regulation.

Revenues (+/-): NA

Expenditures (+/-): NA

Other Explanation: NA

SUMMARY OF MATERIAL INCORPORATED BY REFERENCE  
805 KAR 1:020

This administrative regulation incorporates the following documents:

**I. Recommended Practice for Field Testing Water-based Drilling Fluids” API RP 13B-1 Fourth Edition (March 2009)** This document details how an operator can protect a freshwater zone during drilling operations. This is newly incorporated document and consists of 91 pages.